



### Woody, Observational Plantings

Woody, observational plantings at the Manhattan Plant Materials Center (PMC) highlight three shrub species currently under evaluation, Yellowhorn, *Xanthoceras sorbifolium* Bunge; Southern blackhaw, *Viburnum rufidulum* Raf.; and Desert willow, *Chilopsis linearis* (Cav.) Sweet ssp. *linearis*.

**Yellowhorn**, *Xanthoceras sorbifolium* Bunge. A striking deciduous shrub or tree up to 24' tall is native to northern China. It has a stout, upright habit. Lustrous green leaves hang on late into fall. The leaves are alternate, odd-pinnate, and composed of sessile, narrow, serrate leaflets. Beautiful stalked flowers occur in May and are about  $\frac{3}{4}$ " to 1" in diameter in racemes 6" to 10" long. The 5 petals of each flower are white with a blotch at the base that changes from yellow to red. To a degree, the flowers resemble popped popcorn. Another common name for this plant is popcorn shrub. When in bloom, the plants are quite striking. Fruit is a 3-valved, thick-walled capsule that turns from green to yellow (hence the name yellowhorn) then brown as capsules mature. Seeds are pea-sized and dark brown. In the winter, plants can be a bit coarse in appearance. This plant can be left as a shrub or pruned into multi-stemmed small trees. Plants are moderate in annual growth and show little signs of insect pests or disease. Yellowhorn can be difficult to transplant and the plants need good drainage. As these plants reached maturity they have been reliable bloomers; both flowers and fruits are attractive. Producing seed at the PMC with recruitment noted in the canopy of the parent plants which are spaced 10' apart, 20 seedlings were found. In adjacent shrub rows, 14 seedlings were found which indicates a concern for invasiveness. The most prolific fruiting of the plant was noted in 2012. Leaf scorch and anthracnose detracted foliage appearance, perhaps due to the severe drought conditions. Plant uniformity fell into two groups, 3 plants in 1 and 2 in the other (Fig. 1). Probable hardiness: USDA Zones 4 to 7.



#### Yellowhorn trio uniform plant height

Photo by John M. Row, USDA NRCS

Ames 26017 was obtained as bare-root seedlings from Lawyer Nursery, Inc., Plains, Montana, in the spring of 2000 and plants were grown for one growing season at Ames, Iowa, before being shipped to the PMC in 2001. The seed source for this material was obtained from northern China.

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**Southern blackhaw**, *Viburnum rufidulum* Raf. A member of the Adoxaceae family, this species is among the most attractive of viburnums native to our region. Among its strongest attributes are glossy, leathery leaves, which often turn an intense, wine-red color in autumn, inflorescences and fruiting clusters that are at least as large and showy as its more commonly cultivated relative, *V. prunifolium*, and, on older plants, a distinctive, dark, blocky bark, resembling that of *Cornus florida*. Its fruits are edible and attractive to birds, and its overwintering and freshly opening vegetative buds are thickly covered with rusty hairs. Where it is native in the southern parts of our region, it is occasionally cultivated, but low winter temperatures may limit its utility in sites colder than Zone 5. Some populations are not even hardy to that extent. For example, Dr. Julian Steyermark in *Flora of Missouri*, noted, "In northern Illinois...this *Viburnum* is the only one of the Missouri species which has failed to prove hardy."

Ames 21668 (Accession 9050482) 'Royal Guard' was propagated by stem cuttings from a shrub supplied by the Holden Arboretum, Kirtland, Ohio, which had obtained the germplasm from Ned's Nursery, Amanda, Ohio. Dr. Harrison Flint indicated that "most plants of this species, *V. rufidulum*, used in the Midwest originated from seed collected in Missouri by

the late Bill Heard of Des Moines, Iowa. A superior upright clone from this origin, 'Royal Guard' was selected at the former Cole Nurseries, Circleville, Ohio, and introduced by Ned Rader of Amanda, Ohio." Its leaf shape and plant form suggest that this clone possesses some characteristics of *V. prunifolium* hinting at hybridity.

Ames 25098 (Accession 9050483) was propagated by stem cuttings from a mature shrub growing at the Iowa State University Horticulture farm, east of Gilbert, Iowa. Given the long relationship between ISU and Bill Heard, it is possible that this plant also originated from a Missouri seed source.

Probable hardiness: USDA Zone 5a. These two clones have been field tested in central Iowa and may be notably hardier than are typical populations.

Five plants of each accession were planted at the PMC 10 years ago. These accessions have certainly lived up to their billing in recent years. The glossy green foliage began to deteriorate in appearance by late July as plants were showing stress and foliar diseases starting to show up; Accession 9050482, leaves turning red revealing a slight disease presence in September and beginning to fall due to the continued drought of 2012; plant No. 3 was heavily fruited; Accession 9050483 loaded with fruit, beginning to turn, had attractive fall foliage more so than 9050482. Accession 9050482 stood out a cut above 9050483, not as tall, 9' 10" but wider at 10' 6" by 6' 6", was more uniform among cohorts.

**Desert willow**, *Chilopsis linearis* (Cav.) Sweet ssp. *linearis*. A member of the Bignonia Family, desert willow is a spreading deciduous shrub or small tree that can surpass 16' in height. Though not a willow, its linear leaves brings willow to mind, thus the name. A native of the Southwest, the species can be found growing in southwest Kansas and western Oklahoma. Its flowers occur in showy clusters at the tips of the branches on new growth from late spring to fall. The trumpet-shaped, sweetly fragrant flowers, ranging from light pink to light violet are reminiscent of catalpa blossoms. In fact this small tree is related to the catalpa tree. Desert willow likes arid climates; extremely drought tolerant, performs best on well-drained sites in areas with less than 30" of precipitation, and thrives best in full sun. Several collections have been made in Meade County, Kansas, by Tom Flowers. Plants of accession 9050543 were propagated from seed and planted on the PMC in 2009.

### Manhattan Plant Materials Center: A Trial Site

The purpose of this newsletter is to inform cooperators and others interested in woody plants about woody plant trials at the PMC. Many of the entries are part of the USDA Agricultural Research Service (ARS) Plant Introduction System, North Central Regional Plant Introduction Station's (NCRPIS) NC-7 Trials for which the PMC is a cooperating trial site. Additional entries are provided by cooperating PMC's, NRCS field offices, and university forestry programs desiring the testing of promising woody plant materials.



**'Royal Guard' Southern blackhaw in full bloom**

Photo by John M. Row, USDA NRCS



**Large, trumpet-shaped flowers**

Photo by John M. Row, USDA NRCS



**Three year old shrub covered with flower clusters**

Photo by John M. Row, USDA NRCS

One plant flowered the second growing season, with profuse flowering by all four established plants in 2011. Virtually disease and insect free; very clean foliage, plants moderately uniform, good plant vigor; many large, long lasting, attractive flowers develop into slender fruits producing mature seeds; attractive to pollinators and hummingbirds season long. Winter kill on young growth was overcome by new annual growth. The plants are almost 10' tall in four years of growth.

Plant descriptions appearing in this newsletter were a major contribution by Jeffery D. Carstens, Research Technician, and Dr. Mark P. Widerlechner, Horticulturist (Retired), NCRPIS, Ames, Iowa, with edits and additions by John M. Row, Plant Materials Specialist, NRCS, Manhattan, Kansas.